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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,064	05/08/2002	Wolfgang Wehl	2117.GLE.PT	9278

7590

10/06/2003

Morriss Bateman O'Bryant & Compagni
Suite 300
5882 South 900 East
Salt Lake City, UT 84121

EXAMINER

MOUTTET, BLAISE L

ART. UNIT.	PAPER NUMBER
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2853

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/030,064	Applicant(s) WEHL ET AL.	
	Examiner Blaise L. Mouttet	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-98 is/are pending in the application.
- 4a) Of the above claim(s) 92-98 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 38-91 is/are allowed.
- 6) ☒ Claim(s) 34-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input checked="" type="checkbox"/> Other: <i>Reasons for Allowance</i> . |

DETAILED ACTION

Formal Matters

1. It is noted that the specification refers to specific claim numbering on pages 1, 2 and 12 of the specification. It is advised that specific references to claim numbering be deleted from the specification since renumbering of the claims and cancellation of claims render such references nonsensical.

Correction is required.

2. As noted in the prior office action claims 34-37 as originally filed are rejected as being incomplete since they are dependent upon cancelled claims 33-36 (see MPEP 608.01(n) section V).

The applicant has submitted new claims 34-94 in the preliminary amendment of May 8, 2002 which have been renumbered claim 38-98 in accordance with 37 CFR 1.126. Claim 34 of the preliminary amendment is now claim 38, claim 35 of the preliminary amendment is now claim 39, etc.

It is advised that applicant cancel claim 34-37.

Correction is required.

Election/Restrictions

3. It is noted that applicant refers to claims 34-87 as group I of the election. It is noted that these claims have been renumbered claims 38-91.

Art Unit: 2853

Applicant's election with traverse of claims 38-91 in the paper filed August 8, 2003 is acknowledged. The traversal is on the ground that the method and apparatus claims are sufficiently similar is not found persuasive because the special technical feature of a thermal barrier element being an integral part of a piezoelement is lacking from the method.

The requirement is still deemed proper and is therefore made FINAL.

Claims 92-98 drawn to a method for producing a joint was non-elected with traverse. Applicant is required to cancel the noted claims or take other appropriate action (37 CFR 1.144).

Ex Parte Quayle

4. This application is in condition for allowance except for the formal matters noted above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Prior Art of Record

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2853

Hayes et al. US 5,229,016 teaches that identical methodology may be employed in the microfluidic ejection art for solder drop ejection and ink drop ejection (column 5, lines 31-35).

Fujioka US 5,418,561 teaches the provision of a thermal barrier element (14) between an ink supply channel (3C) and a piezoelement (13) in a printhead for squirting a hot liquid medium. Fujioka lacks any teaching of the thermal barrier being an integral part of the piezoelement or the provision of a diaphragm or membrane.

Hosono et al. US 5,471,232 teaches of a mechanical barrier (41) decoupling a membrane/diaphragm (50) and a piezoelement (15). The barrier is taught to be formed of metal or resin (column 4, lines 37-56). Hosono et al. fails to specify that the barrier is a thermal barrier or that the barrier may be formed as an integral part of the piezoelement.

Hayes US 5,622,897 teaches heating/cooling elements for piezoelectric elements used in microfluidic ink ejectors.

Tsung Pan et al. US 5,779,971 discloses several different printhead structures utilized to eject solder were known to the prior art.

Kato US 5,793,394 recognizes the problems of thermal effects on diaphragms in piezoelectric printheads employing hot liquid medium and proposes a solution to the problem by providing a novel diaphragm structure.

Kozawa US 6,003,968 recognizes the problems of thermal effects on diaphragms in piezoelectric printheads employing hot liquid medium and proposes a solution to the

Art Unit: 2853

problem by providing adhesive layers between the piezoelectric and diaphragm designed to relieve thermal stress.

REASONS FOR ALLOWANCE

6. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the indication of the allowability of claim 38-91 is the inclusion therein, in combination as currently claimed, of the limitation of the thermal barrier being an integral part/component of the piezoelement. This limitation is found in claims 38-91 and is neither disclosed nor taught by the prior art of record, alone or in combination.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Blaise Mouttet whose telephone number is (703) 305-3007. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.


Art Unit: 2853

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, Art Unit 2853, can be reached at (703) 308-4896. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Blaise Mouttet September 11, 2003

Bm 9/11/2003


Stephen D. Meier
Primary Examiner

Notice of References Cited

Application/Control No.

10/030,064

Applicant(s)/Patent Under
Reexamination
WEHL ET AL.

Examiner

Blaise L Mouttet

Art Unit

2853

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5229016	07-1993	Hayes et al.	222/590
	B	US-5418561	05-1995	Fujioka	347/88
	C	US-5471232	11-1995	Hosono et al.	347/70
	D	US-5622897	04-1997	Hayes	438/21
	E	US-5779971	07-1998	Tsung Pan et al.	266/237
	F	US-5793294	08-1998	Kato	347/70
	G	US-6003968	12-1999	Kozawa	347/20
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

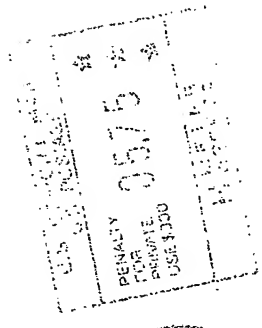
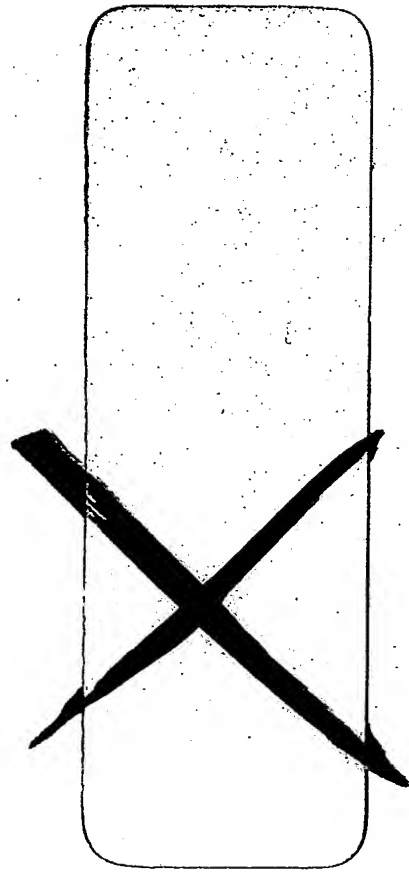
*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.


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